

Paolo Di Francesco, PhD

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Senior Solutions Architect at AWS with 15+ years in tech spanning cloud architecture, MLOps, AI/GenAI, cybersecurity, and telecommunications research. Published author, public speaker, and external university lecturer.

Professional Experience

Amazon Web Services (AWS)

Vienna, Austria

Senior Solutions Architect

Jul 2022 – Present

- Design and implement cloud-based solutions for customers across industries, with focus on Machine Learning Operations (MLOps), DevOps, and Generative AI.
- Published 5 technical blog posts on the [AWS Machine Learning Blog](#), covering MLflow, SageMaker Pipelines, FMEval, and MLOps best practices.
- Developed public workshops used by AWS field teams worldwide:
 - [Amazon SageMaker Immersion Day \(GitHub\)](#)
 - [Amazon SageMaker MLOps: from idea to production in six steps \(GitHub\)](#)
- Public speaker at AWS Summit Zurich 2024 and AWS Cloud Day Zurich 2023.

Solutions Architect

2020 – Jul 2022

- Helped customers across startups, SMBs, and enterprises adopt AWS services and design scalable cloud architectures.
- Delivered technical workshops, architecture reviews, and proof-of-concept engagements.

Cybersecurity Industry

Vienna, Austria

Software Engineer & Architect

Oct 2017 – 2020

- Designed and implemented a service-oriented architecture for a cloud-based IT security monitoring product. Led the transformation of a monolith into a modular system.
- Designed REST APIs, resolved critical performance bottlenecks, and mentored junior developers.

Development Team Leader

Jan 2017 – Oct 2017

- Led a development team, managed hiring, and facilitated stakeholder collaboration.

Software Developer

Mar 2016 – Dec 2016

- Implemented features in a test-driven development environment with peer review.

Trinity College Dublin

Dublin, Ireland

Postdoctoral Researcher

Sep 2015 – Mar 2016

- Contributed to the [WiSHFUL](#) EU Horizon 2020 project, developing frontend/backend for remote access to the TCD wireless testbed.

Teaching Assistant

Sep 2012 – May 2015

- Taught Java programming and Fundamentals of Electrotechnics (filtering, modulation, oscilloscope usage).

Research Assistant

Mar 2010 – Dec 2010

- Developed a split-architecture for carrier-sensing based MAC protocols on Software Defined Radio platforms.

O2 Ireland & Trinity College Dublin

Dublin, Ireland

Data Analyst (university-enterprise collaboration)

Sep 2013 – Sep 2014

- Analysed spatio-temporal dynamics in cellular traffic demand using large-scale anonymized call detail records.

Teaching

TU Wien – External Lecturer

Mar 2023 – Present

- Lecturing the AI and Generative AI module for the [Project Course on Cloud Computing \(192.035\)](#).

Education

Ph.D. in Electronic & Electrical Engineering	Trinity College Dublin, 2011 – 2016
Thesis: “On the Effects of Resource Sharing on Mobile Network Deployment Decisions”	
M.Sc in Telecommunications Engineering	University of Bologna, 2008 – 2011
B.Sc in Telecommunications Engineering	University of Bologna, 2004 – 2008

Awards & Certifications

- Member of the winning team at the **IEEE DySPAN 5G Spectrum Challenge 2015**
- AWS Certified Machine Learning – Specialty (2021)
- AWS Certified Solutions Architect – Professional (2021)

Public Speaking

- “Accelerate FM pre-training on Amazon SageMaker HyperPod” – AWS Summit Zurich, Sep 2024
- “Productionize ML workloads using Amazon SageMaker MLOps” – AWS Cloud Day Zurich, Sep 2023

Selected Publications

Journals

- P. Di Francesco, F. Malandrino, and L.A. DaSilva, “Assembling and Using a Cellular Dataset for Mobile Network Analysis and Planning,” *IEEE Trans. on Big Data*, 4(4), 2018.
- P. Di Francesco, J. Kibilda, F. Malandrino, N. Kaminski, and L.A. DaSilva, “Sensitivity Analysis on Service-Driven Network Planning,” *IEEE/ACM Trans. on Networking*, 25(3), 2017.
- P. Di Francesco, F. Malandrino, T.K. Forde, and L.A. DaSilva, “A Sharing- and Competition-Aware Framework for Cellular Network Evolution Planning,” *IEEE Trans. on Cognitive Communications and Networking*, 1(2), 2015.
- P. Di Francesco, S. McGettrick, U.K. Anyanwu, A.B. MacKenzie, and L.A. DaSilva, “A Split MAC Approach for SDR Platforms,” *IEEE Trans. on Computers*, 64(4), 2015.

Conferences

- J. Kibilda, P. Di Francesco, F. Malandrino, and L.A. DaSilva, “Infrastructure and Spectrum Sharing Trade-offs in Mobile Networks,” *IEEE DySPAN*, Stockholm, 2015.
- P. Di Francesco, F. Malandrino, and L.A. DaSilva, “Mobile Network Sharing Between Operators: A Demand Trace-Driven Study,” *ACM SIGCOMM CSWS*, Chicago, 2014.
- A. Puschmann, P. Di Francesco, et al., “Enhancing the Performance of Random Access MAC Protocols for Low-cost SDRs,” *ACM WiNTECH*, Miami, 2013.
- P. Di Francesco, S. McGettrick, et al., “A Split Architecture for Random Access MAC for SDR Platforms,” *CROWNCOM*, Washington DC, 2013.

Technical Skills

Cloud & AI/ML: Amazon SageMaker AI, Amazon Bedrock, AWS Lambda, Amazon API Gateway, AWS CDK, AWS CloudFormation, Amazon ECS, MLflow, Docker, MLOps

Programming: Python, Java, JavaScript, Ruby, C/C++, MATLAB

Frameworks & Tools: Ruby on Rails, CDK, Git, LaTeX, GNU Radio, Gurobi

Databases: PostgreSQL, MySQL

Languages

Italian (native) English (fluent) German (basic)